# Testing Laboratories, Inc. 940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063

Certificate

Chemistry. Microbiology. and Technical Services

. CLIENT: Alaskan Copper Works

P.O. Box 3546

Seattle, WA 98124 ATTN: Jim Brown

LABORATORY NO. 14380

DATE: Feb. 14, 1989

PO# M8675

REPORT ON: ACID

SAMPLE

IDENTIFICATION:

Submitted 02/02/89 and identified as shown below:

2-1-3600-M8675

TESTS PERFORMED AND RESULTS:

Total Acidity, calculated as % HNO3 (methyl orange end point) Specific Gravity at 25°C

<u>Sample</u>

2.8 1.038

parts per million (mg/L)

Chromium Copper Nicke1 Zinc

67. 6.5

57.

35.

Respectfully submitted,

Laucks Testing Laboratories, Inc.

Ú. Μ. Owens

JMO:emt



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Technical Services for: Industry, Commerce, Legal Profession & Insurance Industry

1530 FIRST AVENUE SOUTH

SEATTLE, WASHINGTON 98134

Telephone. (206) 622-0680

Report To: Alaskan Copper & Brass Works

BB B:14 FRUN NORTHWEST ERBURHTURT

Date: 3-8-89

Report On: Acid Tank Sample

Lab No: E 46759 ✓

#### SUBMITTED:

One (1) acid tank sample "3200". ID #2-28-3200 - M9043 for % acid, specific gravity and heavy metals - Cr. Ni. Cu, Zn.

#### ANALYSIS:

Sample (or Element)	<u>Test Result</u>
Chromium, Cr. %	0.10
Nickel, Ni, %	0.70
Copper, Cu, %	0.05
Zinc, Zn, %	0.005
Specific Gravity	1.19
Acid, HNO3, %	18.83

NORTHWEST LABORATORIES

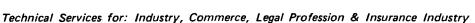
SAM LEBARRON, Director Analytical Laboratory

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**SEATTLE, WASHINGTON 98134** 

Telephone: (206) 622-0680

Report To: Alaskan Copper Works

Date: February 28, 1989

Report On: Acid Tank Sample

Lab No.: E 46664

P.O. #M-8938

#### SUBMITTED:

One (1) Acid Tank Sample "3200" ID - #2-21-3200-M8938

#### ANALYSIS:

Element	Test Result
Chromium, Cr, %	0.89
Nickel, Ni, %	1.77
Copper, Cu, ppm	480
Zinc, Zn, ppm	16.40

NORTHWEST LABORATORIES

Sam LeBarron

Director, Analytical Laboratory

wbm

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1530 FIRST AVENUE SOUTH

SEATTLE, WASHINGTON 98134

Telephone: (200) 622-0680

Report To: Alaskan Copper Works

Date: March 1, 1989.

Report On: Acid Tank Sample

Lab No.: E 46693

Attention Jim Brown

PO # M9003 and 9004

SUBMITTED:

two acid tank samples for Chromium, Nickel, Zinc and Copper

Sample #1 ID 2-24-3200 - M - 9003 Sample #2 ID 2-24-3200 - M - 9004

ANALYSIS:

Sample (or Element)	<u>Test Result</u>	Specification
Copper, Cu, %	Sample #1 0.05	Sample #2 0.04
Nickel, Ní, %	0.59	0.46
Chromium	0.70	0.50
Zinc, Zm, ppm	17	10

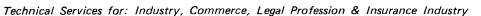
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Sam LeBarron

Director, Analytical Laboratory

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1530 FIRST AVENUE SOUTH

SEATTLE, WASHINGTON 98134

Telephone: (206) 622-0680

Report To: Alaskan Copper Works

Date: February 28, 1989

Report On: Acid Tank Sample

Lab No.: E 46664

#### SUBMITTED:

One (1) Acid Tank Sample "3200" ID - #2-21-3200-M8938

#### ANALYSIS:

<u>Element</u>	Test Result
Chromium, Cr, %	0.89
Nickel, Ni, %	1.77
Copper, Cu, ppm	480
Zinc, Zn, ppm	16.40

NORTHWEST LABORATORIES

Director, Analytical Laboratory

wbm



Certificate

LABORATORY NO. 14879

DATE: Mar. 14, 1989

PO #M9099

940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063

Chemistry Microbiology and Technical Services

CLIENT: Alaskan Copper Works

P.O. Box 3546

Seattle, WA 98124

ATTN:

Jim Brown

REPORT ON: NITRIC ACID

SAMPLE

IDENTIFICATION: Submitted 3/3/89 and identified as shown:

3-3-3200-M9099

Specific Gravity - Insufficient sample for analysis.

Total Acidity, calculated as % HNO3 (methyl orange end point) -

6.2

Respectfully submitted,

Laucks Testing Laboratories, Inc.

4. M. Owens

JMO:veg



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